Oral Health Knowledge, Attitudes & Practices of the elderly in Ajman, UAE

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ABSTRACT

Objective: To assess oral health knowledge, attitude, and practices of elderly and to identify barriers which affect receiving oral health services by the elderly.

Materials and Methods: A cross sectional study was conducted including males and females aged >60 years attending the GMC hospital and Al Mushaerif PHC Center. A convenience sampling method was used to recruit the participants. The administered questionnaire, interviewer Validated, was used. A scoring system was used to assess the knowledge and practice of participants. Individuals with < average scores were considered to have poor knowledge and inadequate practice. Data was analyzed using the SPSS software 20. X^2 test, simple and multiple logistic regression analysis were used. A p value <0.05 was the significance level.

Results: The study included 423 participants, mostly 60-69years old (55.5%), females (58.2%), Emirati (63.2%), currently unmarried (60.2%), living with family members (44.3%), having >12 years of education (59%) medical insurance (60.8%) dental insurance 41.0%. The most frequent barrier that affect receiving oral health services is "being unable to afford the payment" (24.5%). A 20.3% of participants had zero knowledge score, 62% had poor knowledge and 87.9% had inadequate practices. The probability of poor knowledge was significantly higher among older age group (OR: 4.9; CI: 2.0-12.4, p=0.001), living with other family members (OR: 2.9; CI:1.6-5.3, p<0.001), and Emirati (OR:2.6; CI:2.3-5.4, p<0.001). Probability of inadequate practices was significantly higher among unmarried (OR: 2.7; CI: 1.4-5.0) and Emirati (OR: 3.1;CI: 1.7-5.7).

Conclusion: A great proportion of elderly had poor knowledge and inadequate oral hygiene practices. Ethnic and social factors are significant determinants of poor knowledge and inadequate practices. Economic factor was the most common barrier.

Keywords: Elderly, oral health, knowledge

INTRODUCTION

Ageing is a global phenomenon. The world's elderly population - people 60 years of age and older - is the fastest growing age group. By 2050 about 80% of the elderly will be living in developing countries[1]. Population ageing is a triumph of modern society. It reflects improving global health, but also raises special challenges for the 21st century in both developing and developed countries. In 2005, life expectancy in countries like Japan and France was already more than 80 years. Life expectancy is also rising in developing countries: a child born today in Chile, Costa Rica, Jamaica, Lebanon, Sri Lanka or Thailand can expect to live for more than 70 years[2].

In 2002, WHO issued a document entitled 'Active Ageing – A Policy Framework', which outlines the essential approaches towards healthy ageing[3]. The proposed policy framework rests on three basic pillars: health, social participation and security. The WHO report shows that millions of elderly people across the globe are not getting the oral health care they need because governments are not aware enough of the problem. By 2025, there will about 1200 million people aged 65 years according to UN estimates. Failure to address oral health needs today could develop into a costly problem tomorrow[4].

Evidence showed that dental health needs of elderly are influenced by socio-demographic variables, like literacy level, oral hygiene practices, oral health perception and diet, and by other variables like previous restorative treatment, presence or absence of systemic diseases[5]. Studies from developing country indicated that use of oral health services is mostly symptom oriented and regular oral hygiene habits are infrequent and varies among different socioeconomic groups[6]. Life style factors like smoking, and dietary practices can affect oral health in elderly, but the experiences gained in some countries have shown that old age can achieve healthy lifestyles and have positive outcomes as an effect of health-education intervention programmes[4]. Reduction in prevalence of dental problems has taken place in many developed countries, and this is primarily ascribed to changing living conditions, adoption of healthy life style improved self-care practices, effective use of fluorides and establishment of preventive oral acre programmes[7,8]. In contrast Increasing levels of dental problems have been observed in several developing countries, especially in those countries where preventive programmes have not been implemented[9]. In developed countries, variation in frequency of dental problem among elderly from different socioeconomic status groups has been reported. Data from the USA showed large differences in the prevalence of edentulism (total tooth loss) by socioeconomic status. Persons with family incomes below the poverty line were almost twice as likely to be edentulous as persons with family incomes at or above the poverty line. Similarly, edentulism was higher among black persons than among white persons[10].

Studies including elderly demonstrate the association between oral health and general health and wellbeing. A study in South Australia[11] including 1217 non-institutionalized people aged 60 years and over, demonstrate that conditions such as difficulty chewing, discomfort during eating and often avoidance of food were reported by more than five percent of dentate persons (people with their own teeth) and by 10 per cent of edentulous persons. In addition, five per cent reported that their oral health had significant impact on their interpersonal relationships. Preventing periodontal diseases is particularly relevant because studies have shown a possible association between these

diseases and diabetes and cardiovascular diseases, which are major causes of death among the elderly population[10]. Analysis of oral health knowledge and behaviour of the UAE elderly population is essential for specification of oral health knowledge needs as well as for development of behaviour modification strategies relevant to UAE. Improving individuals' knowledge of dental health matters can be achieved through oral health promotion and oral health education. The study objectives were to assess oral health knowledge, attitude, and practices of elderly and to identify barriers which affect receiving oral health services by the elderly.

MATERIAL AND METHODS

A cross sectional study was conducted including males and females aged >60 years attending the GMC hospital and Al Mushaerif PHC Center. A convenience sampling method was used to recruit the participants. Sample size determination was done based on the Ajman statistical year book, 2009 in which the number of population above the age of 60 years in Ajman was 2579, so at significance level of 5% and marginal error of 5%., and assumed percentage of old people with good oral knowledge as 50%. Thus the minimum sample size required for this study was 335. Validated interviewer administered questionnaire was used. The questionnaire included information on socio-demography, lifestyle habits, oral health knowledge and practices, barriers. A scoring system was used to assess the knowledge and practice of participants. By which a score of 1 was given for correct response and a score of zero for incorrect/ I don't know response. Individuals with < average scores were considered to have poor knowledge and inadequate practice. Data was analysed using the SPSS software 20. X^2 test, simple and multiple logistic regression analysis were used. A p value <0.05 was the significance level. The GMU Ethics Committee approves the study and informed consent obtained from participants before enrolment in the study.

RESULTS

The study included 423 participants. Their socio-demography distribution is shown in table 1. They were mostly 60-69years old (55.5%), females (58.2%), Emirati (63.2%), currently unmarried (60.2%), living with family members (44.3%), having >12 years of education (59%) medical insurance (60.8%) and dental insurance (41.0%). The last dental visit was within the last 12 month in only133 (31.4%) respondents, and regular dental checkup was the reason reported for that visit by 44 respondent (9.9%), while 128 respondents (30.2%) had never visited a dentist or can not remember doing that. Missing teeth was reported by 399 participants (94.3%) and 33.8% of them (n=135) were using prosthetic replacement which was removal in 49% (n=66), fixed in 40% (n=54) and 11% (n=15) had both types.

Using the scoring system for assessment of knowledge and practice showed that 86 participant (20.3%) had zero knowledge score. Figure 1 and 2 illustrate the distribution of participants by knowledge and practice scores respectively. It can be seen that 62% of participants had poor knowledge and 87.9% of them had inadequate practices.

Table 1. Socio-demography distribution of participants

Variable	Subcategory	No	%
Age (Years)	60-69	234	55.5
	70-79	133	31.5
	>=80	55	13.0
Gender	Male	176	41.8
	Female	245	58.2
Nationality	Emirati	264	63.2
	Non-Emirati	154	36.8
Education (Years)	<=12	16	41.0
	> 12	23	59.0
Marital status	Married	163	39.8
	Currently not married	247	60.2
Living condition	Alone	98	23.6
	With Family/Others	184	44.3
	With partner	133	32.0
Medical insurance	Yes	253	60.8
	No	163	39.2
Dental insurance	Yes	170	41.0
	No	245	59.0

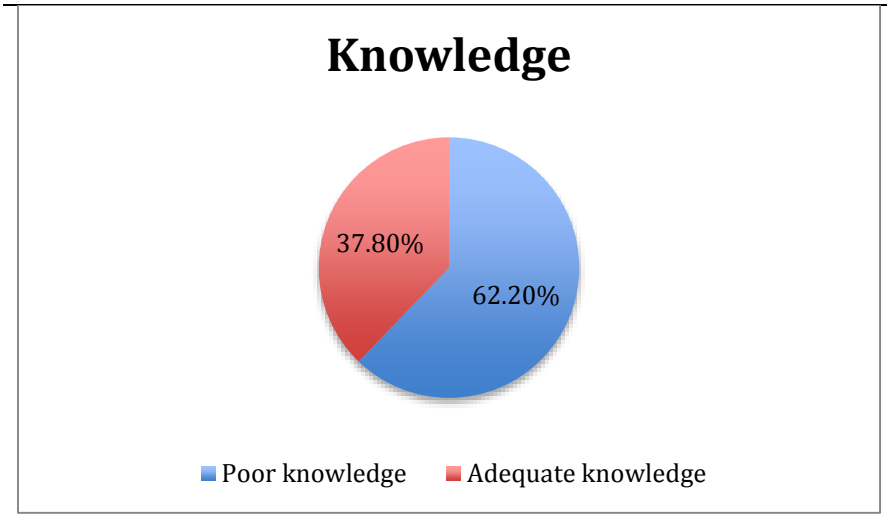

Figure 1. Distribution of the participants by Knowledge scores

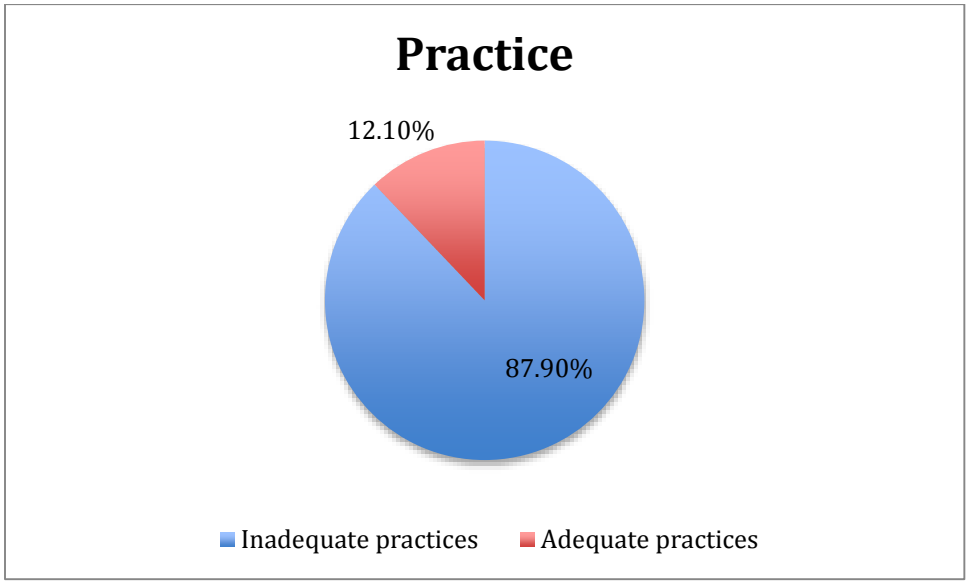

Figure 2. Distribution of the participants by practice scores

Associations between knowledge scores and selected independent variables are depicted in table 2. Significantly higher frequency of poor knowledge scores were found among participants in older age group, Emirati, and those living with others/family member. Associations between practice scores and selected independent variables are demonstrated in table 3. Significantly higher frequency of inadequate practice scores was found among participants in older age group, Emirati, Currently not married, and those who had medical insurance. Regression analysis for predictors of poor knowledge and practice scores are shown in table 4 and 5 respectively. It can be seen that the probability of poor knowledge was significantly higher among older age group (OR: 4.9; CI: 2.0-12.4, p=0.001), living with other family members (OR: 2.9;CI:1.6-5.3, p<0.001), and Emirati (OR:2.6; CI:2.3-5.4, p<0.001). Probability of inadequate practices was significantly higher among unmarried (OR:2.694; CI: 1.446-5.02) and Emirati (OR: 3.088;CI: 1.661-5.739).

The most frequent barrier among participants who needed dental care within the last 12 months and could not get it on time (n=42) was "being unable to afford the payment" (26.2%), shown in figure 3.

Respondents who had ever received oral /denture hygiene instruction constitute only 57% and in those who had received such information the main sources were the dentist (90.3%), family and friends (6.5%), nurses (2.6%), and media/other (0.6%).

Table 2. Association between knowledge scores and selected independent variables

Variable	Subcategory	Knowledge scores				P
		Poor		Adequate		
		No.	%	No.	%	
Age	60-69	118	50.4	116	49.6	<0.001
	70-79	95	71.4	38	28.6	
	>=80	49	89.1	6	10.9	
Gender	Male	104	59.1	72	40.9	0.225
	Female	159	64.9	86	35.1	
Nationality	Emirati	193	73.1	71	26.9	<0.001
	Non-Emirati	67	43.5	87	56.5	
Education (Years)	<=12	3	18.8	13	81.3	0.480*
	> 12	7	30.4	16	69.6	
Marital status	Married	95	58.3	68	41.7	0.080
	Currently not married	165	66.8	82	33.2	
Living condition	Alone	41	41.8	57	58.2	<0.001
	With Family /Others	141	76.6	43	23.4	
	With partner	74	55.6	59	44.4	

*Fisher exact test

Table 3. Association between practice scores and selected independent variables

Variable	Subcategory	Practice scores				P
		Inadequate		Adequate		
		No	%	No	%	
Age	60-69	195	83.3	39	16.7	0.003
	70-79	122	91.7	11	8.3	
	>=80	54	98.2	1	1.8	
Gender	Male	154	87.5	22	12.5	0.737

	Female	217	88.6	28	11.4	
Nationality	Emirati	242	91.7	22	8.3	0.003
	Non-Emirati	126	81.8	28	18.2	
Education (Years)	<=12	15	93.8	1	6.3	0.778
	> 12	21	91.3	2	8.7	
Marital status	Married	134	82.2	29	17.8	0.005
	Currently not married	226	91.5	21	8.5	
Living condition	Alone	87	88.8	11	11.2	0.182
	With Family /Others	166	90.2	18	9.8	
	With partner	111	83.5	22	16.5	
Medical insurance	Yes	230	90.9	23	9.1	0.014
	No	135	82.8	28	17.2	
Dental insurance	Yes	155	91.2	15	8.8	0.093
	No	210	85.7	35	14.3	

Table 4. Predictors of poor knowledge scores*

Variables	Categories	N	Predictors of poor knowledge scores			
			COR (95% CI)	P	AOR (95% CI)	P
Age (years)	60-69	234	1		1	
	70-79	133	2.458 (1.559-3.874)	<0.001	2.160 (1.327-3.516)	0.002
	>=80	55	8.028 (3.311-19.464)	<0.001	4.914 (1.955-12.354)	0.001
Gender	Male	176	1	0.225	-	-
	Female	245	1.280 (0.859-1.907)			
Nationality	Non-Emirati	154	1	<0.001	1	<0.001

	Emirati	264	3.530 (2.322-5.366)		2.646 (1.589-4.406)	
Education	<=12	16	1	0.415	-	-
	> 12	23	1.896 (0.407-8.824)			
Marital status	Married	163	1	0.080	-	-
	Currently not married	247	1.440 (0.957-2.168)			
Living condition	Alone	98	1		1	<0.001
	With Family/Others	184	4.559 (2.691-7.721)	<0.001	2.930 (1.618-5.308)	
	With partner	133	1.744 (1.029-2.955)	0.039	0.996 (0.523-1.896)	0.991

*70.9% prediction

Table 5. Predictors of inadequate practice scores

Variables	Categories	N	Predictors of inadequate practice scores			
			COR (95% CI)	P	AOR (95% CI)	P
Age(years)	60-69	234	1			
	70-79	133	2.218 (1.095-4.495)	0.027	-	-
	>=80	55	10.800 (1.450-80.417)	0.020	-	-
Gender	Male	176	1	0.738	-	-
	Female	245	1.107 (0.610-2.008)			
Nationality	Non-Emirati	154	1	0.003	1	<0.001
	Emirati	264	2.444 (1.344-4.447)		3.088 (1.661-	

					5.739)	
Education	> 12	23	1	0.779	-	-
	<=12	16	1.429 (0.118-17.234)			
Marital status	Married	163	1	0.006	1	
	Currently not married	247	2.329 (1.277-4.248)		2.694 (1.446-5.020)	0.002
Living condition	With partner	133	1			
	Alone	98	1.568 (0.721-3.407)	0.256	-	-
	With Family/ Others	184	1.828 (0.938-3.564)	0.077	-	-
Medical insurance	Yes	253	1	0.016	-	-
	No	163	2.074 (1.148-3.746)			
Dental insurance	Yes	170	1	0.096	-	-
	No	245	1.722 (0.909-3.264)			

*Prediction: 87.7%

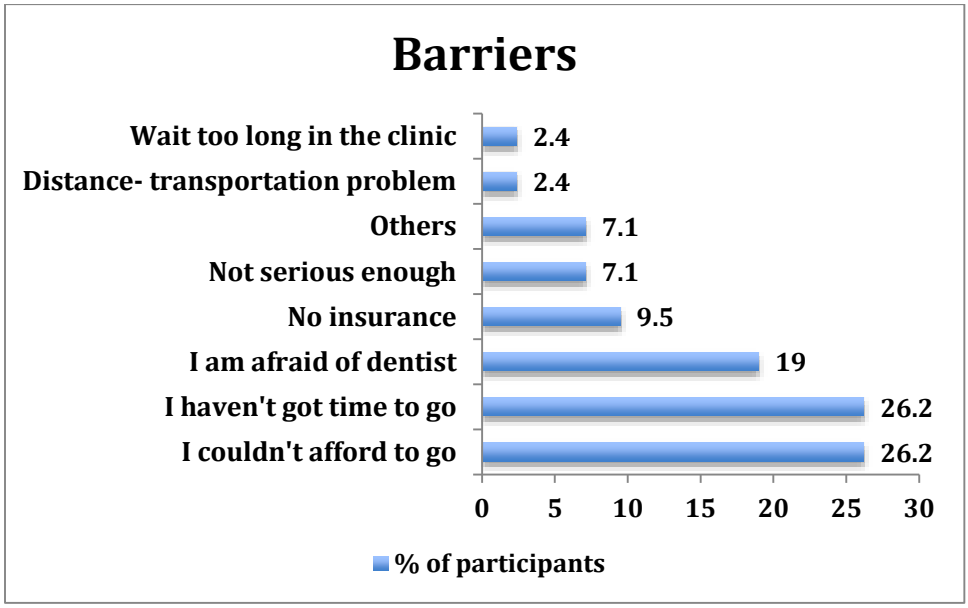

Figure 3. Barrier for receiving oral health services with in the last12 month (n=42)

DISCUSSION

The elderly are a precious asset for any country. With rich experience and wisdom, they contribute their might for sustenance and progress of the nation. Their special health and economic issues differ from those of the general population. The United Nations Principles address the independence, participation, care, self-fulfillment and dignity of older persons as an ensured priority[11]. Although many studies were done to assess the knowledge and practices of healthcare providers of old people[12-14], less number of researches had investigated the oral health knowledge and behavior of old adults themselves. Current data showed that 31.5% of the respondent had dental visit within the previous 12 months, this is higher than a study from China indicating that dental visit within the previous 12 months was reported by 25% of participants[15]. Our data like others[15] demonstrated that dentist visit by elderly was mostly symptom oriented and only small percentage of respondents (9.9%) were having periodic dental checkup, while a considerable proportion of them (33.4%) had never or can't remember visiting dentist. Taiwo et al. reported that 65.7% of the elderly in Ibadan, Nigeria have never visited the dental clinic before[16].

Missing teeth prevalence is declining in many developed countries[17]. Musacchio et al.[18] reported a prevalence of 44% among the elderly Italian population, which was, according to the authors, at the high end among Western countries. Higher prevalence was reported from developing countries. A study from India[19] showed that 70.3% of the studied elderly were partially or completely edentulous. In this study, higher frequency of missing of teeth was reported (94.3%). Moreover, restoration of missing teeth by prosthetic replacement was reported by only 33.8% of respondents with missing teeth.

Barriers to oral health care utilization are many, four main groups of barriers have been identified which include dental anxiety, expensive nature of dental treatment, perception of need and lack of access[20]. In this study the major identified barriers are related to the first two groups. A good understanding of the barriers that prevent people

from seeking appropriate and timely oral health intervention is important when designing out- reach activities that would bridge the gap between the need for care and the amount of care sought[21].

The current data showed marked lack of oral health knowledge was observed which was mostly determined by age (higher risk of poor knowledge in older age group), social factors related to living arrangement and ethnic factor. Lower oral health knowledge scores among older age respondents was also describe by others[22,23].

In this study, females were found to have higher probability of low oral health knowledge and practice scores, however, the gender effect became insignificant when the effect of other factors were adjusted for. This is in agreement with McGrath et al study from HongKong[23] that declared non-significantly higher oral health knowledge and behavior scores in non-institutionalized elderly males compared to females. The authors also identified significantly lower knowledge and practice scores among elderly compared to young adult group.

Education has been show to be a significant social determinant of oral health[24]. Unexpectedly, education did not appear as a significant determinant in this study. Sadeghi and coworkers[25] showed that respondents with less than secondary school graduation were the least likely to have visited a dentist in the past year (42.7%, C.I: 45.7-48.7).

With regard to the living arrangement, it has been suggested that living arrangements of elderly are closely linked to income, health status, level of independency and the availability of caregivers[26]. In this study, old persons who were living with family/others have 2.9 times higher chance of having inadequate oral health practice. This result could have been affected by the characteristic of the old age population included in this study, since all of them were independent. More studies on this aspect is needed. Insurance is an important factor that can affect utilization of oral healthcare in elderly[27]. In this study, 47% of the participant were having dental insurance, and this is higher than data from china, showing that only about 5% of participants had dental service on health insurance[15]. In this study, on adjusting for all variables, it was identified as insignificant determinant of oral health care practice.

In the present study, the dentist was the main sources of oral health related information for most of the participant (90.3%), while the role of media was very minor (0.6%). This is different from results reported by Zhu L et al, in which radio/ television were the main oral health information source for most participants (47%), followed by reading newspapers or magazines (30%), Posters in hospitals (15%) or instruction from dentists were indicated as sources of information by 15%[15].

LIMITATION

Cannot generalize the findings, missing of information for some variables.

CONCLUSION

A great proportion of elderly had poor knowledge and inadequate oral hygiene practices. Ethnic and social factors are significant determinants of poor knowledge and inadequate practices. Economic factor was the most common barrier.

RECOMMENDATION

1. National study that include representative sample for all elderly in the UAE.
2. Increase awareness of healthcare provider about the significance of having good knowledge and adequate oral heath behavior that can lead to good quality of life.
3. Provision of mobile units that can provide in-house dental care for disabled elderly.
4. Include all elderly by dental insurance.

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